Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in this application.

1. (Currently Amended) A method of measuring the quality of a circuit-switched service transmitted on a traffic channel between a transmitter and a receiver in a cellular radio network, comprising:

the transmitter transmitting user data to the receiver using data frames of the traffic channel;

the transmitter omitting transmission of all data frames of the traffic channel to the receiver based on a determination that the user data are missing;

the transmitter transmitting control data to the receiver using associated control channels of the traffic channel;

the transmitter calculating a number of frames transmitted to the receiver on the traffic channel during a certain time period;

the receiver calculating a number of all frames received and correctly decoded during that certain time period; and

calculating a quality value for a service to be transmitted on the traffic channel during that certain time period by subtracting the number of frames transmitted during that certain time period from the number of frames received and correctly decoded during that certain time period ~~and by dividing a difference obtained by~~ divided by the number of frames transmitted during that certain time period.

2. (Previously Presented) The method of claim 1, wherein the transmitter transmits silence descriptor frames in place of data frames, if the user data are missing.

3. (Previously Presented) The method of claim 2, wherein comfort noise is inserted into the silence descriptor frame, if the service is a speech transmission service.

4. (Previously Presented) The method of claim 2, wherein predetermined data are inserted into the silence descriptor frame, if the service is a data transmission service.

5. (Previously Presented) The method of claim 1, wherein

the transmitter is in a network part of the cellular radio network and the receiver is in a subscriber terminal;

the receiver is configured to transmit an indication of a number of frames received on the traffic channel and correctly decoded to the transmitter; and

the quality value is calculated for a downlink in the network part.

6. (Previously Presented) The method of claim 5, wherein the transmitted number of received frames replaces a bit error ratio estimate, which is calculated by the receiver based on received frames and is subsequently transmitted to the transmitter.

7. (Previously Presented) The method of claim 5, wherein the transmitted number of received frames replaces a bit error ratio estimate, which is calculated by the receiver from all frames received on the traffic channel and is subsequently transmitted to the transmitter.

8. (Previously Presented) The method of claim 6, wherein the bit error ratio estimate transmitted to the transmitter is replaced with a bit error probability which is calculated based on frames received by the receiver.

9. (Previously Presented) The method of claim 6, wherein the bit error ratio estimate or bit error probability transmitted to the transmitter is calculated based only on correctly decoded frames.

10. (Previously Presented) The method of claim 1, wherein

the transmitter is in a subscriber terminal and the receiver in a network part of the cellular radio network;

the transmitter transmits the number of all frames transmitted on the traffic channel to the receiver; and

the quality value for an uplink is calculated in the network part.

11. (Previously Presented) The method of claim 1, wherein the calculated quality value is used for controlling power control of the traffic channel and/or handover and/or link adaptation and/or optimization of a cellular radio network function.

12. (Currently Amended) A cellular radio network comprising a transmitter and a receiver, which communicates with the transmitter over a traffic channel on which a circuit-switched service is transmitted and which consists of data frames and associated control channel frames;

the transmitter comprising:

means for transmitting user data to the receiver using data frames of the traffic channel;

means for omitting transmission all data frames of the traffic channel to the receiver based on a determination that the user data are missing;

means for transmitting control data to the receiver using associated control channel frames of the traffic channel; and

means for calculating a number of all frames transmitted to the receiver on the traffic channel during a certain time period;

the receiver comprising:

means for calculating a number of all frames received on the traffic channel and correctly decoded during that certain time period; and

the cellular radio network comprising:

means for calculating a quality value for a service transmitted on the traffic channel during that certain time period by subtracting the number of frames transmitted during that certain time period from the number of frames received and correctly decoded during that certain time period~~, and by dividing a difference obtained~~ divided by the number of frames transmitted during that certain time period.

13. (Previously Presented) The cellular radio network of claim 12, wherein the transmitter transmits silence descriptor frames in place of data frames, if the user data are missing.

14. (Previously Presented) The cellular radio network of claim 13, wherein comfort noise is inserted into the silence descriptor frame, if the service is a speech transmission service.

15. (Previously Presented) The cellular radio network of claim 13, wherein predetermined data are inserted into the silence descriptor frame, if the service is a data transmission service.

16. (Previously Presented) The cellular radio network of claim 12, wherein

the transmitter is in a network part of the cellular radio network and the receiver in a subscriber terminal;

the receiver further comprises means for transmitting an indication of a number of frames received on the traffic channel and correctly decoded to the transmitter; and

the means for calculating the quality value are in the network part.

17. (Previously Presented) The cellular radio network of claim 16, wherein the transmitted number of received frames replaces a bit error ratio estimate, which is calculated by the receiver from received frames and is subsequently transmitted to the transmitter.

18. (Previously Presented) The cellular radio network of claim 16, wherein the transmitted number of received frames replaces a bit error ratio estimate, which is calculated by the receiver from all frames received on the traffic channel and is subsequently transmitted to the transmitter.

19. (Previously Presented) The cellular radio network of claim 17, wherein the ~~a~~ bit error ratio estimate signalled to the transmitter is replaced with a bit error probability which is calculated from-frames received on the traffic channel by the receiver.

20. (Previously Presented) The cellular radio network of claim 17, wherein the bit error ratio estimate or bit error probability transmitted to the transmitter is calculated based only on correctly decoded frames.

21. (Previously Presented) The cellular radio network of claim 12, wherein

the transmitter is in a subscriber terminal and the receiver in a network part of the cellular radio network; and

the transmitter further comprises means for transmitting an indication of a number of ~~all~~ frames transmitted to the receiver on the traffic channel; and

wherein the means for calculating the quality value are in the network part.

22. (Previously Presented) The cellular network of claim 12, wherein the calculated quality value is used for controlling power control of the traffic channel and/or handover and/or link adaptation and/or optimization of a cellular radio network function.

23. (Currently Amended) A cellular radio network element, comprising

means for transmitting user data to a subscriber terminal using data frames of a traffic channel of a circuit-switched service;

means for omitting transmission of all data frames of the traffic channel to the subscriber terminal based on a determination that the user data are missing;

means for transmitting control data to the subscriber terminal using associated control channel frames of the traffic channel;

means for calculating a number of frames transmitted to the subscriber terminal on the traffic channel during a certain time period;

means for receiving, from the subscriber terminal, an indication of a number of frames received on the traffic channel and correctly decoded in the subscriber terminal; and

means for calculating a quality value for a service transmitted on the traffic channel during the certain time period by subtracting the number of frames transmitted during the certain time period from the number of frames received and correctly decoded during that certain time period~~, and by dividing a difference obtained~~ divided by the number of frames transmitted during that certain time period.

24. (Previously Presented) The cellular radio network element of claim 23, wherein the means for transmitting user data transmits silence descriptor frames in place of data frames, if the user data are missing.

25. (Currently Amended) A cellular radio network element comprising:

means for receiving user data from a transmitter using data frames of a traffic channel;

means for receiving control data from the transmitter using associated control channel frames of the traffic channel;

means for receiving, from the transmitter, an indication of the number of frames transmitted to the receiver on the traffic channel;

means for calculating a number of all frames received on the traffic channel and correctly decoded during a certain time period; and

means for calculating a quality value for a service transmitted on the traffic channel during that certain time period by subtracting a number of frames transmitted during that certain time period from the number of frames received and correctly decoded during that certain time period~~, and by dividing a difference obtained~~ divided by the number of frames transmitted during that certain time period.

26. (Previously Presented) The cellular radio network element of claim 25, wherein the means for receiving user data receives silence descriptor frames in place of data frames, if the user data are missing.

27. (Currently Amended) A cellular radio network element, comprising:

a transceiver configured to transmit user data to a subscriber terminal using data frames of a traffic channel of a circuit-switched service and to omit transmission of all data frames of the traffic channel to the subscriber terminal based on a determination that the user data are missing, wherein the transceiver is further configured to transmit control data to the subscriber terminal using associated control channel frames of the traffic channel and to calculate a number of frames transmitted to the subscriber terminal on the traffic channel during a certain time period, wherein the transceiver is further configured to receive, from the subscriber terminal, an indication of a number of frames received on the traffic channel and correctly decoded in the subscriber terminal during that certain time period;

wherein the transceiver is further configured to calculate a quality value for a service transmitted on the traffic channel during the certain time period by subtracting the number of frames transmitted during the certain time period from the number of frames received and correctly decoded during that certain time period~~, and by dividing a difference obtained~~ divided by the number of frames transmitted during that certain time period.

28. (Previously Presented) The cellular radio network element of claim 27, wherein the transceiver transmits silence descriptor frames in place of data frames, if the user data are missing.

29. (Currently Amended) A cellular radio network element comprising:

a receiver configured to receive user data from a transmitter using data frames of a traffic channel and to receive control data from the transmitter using associated control channel frames of the traffic channel; the receiver being further configured to receive, from the transmitter, an indication of the number of frames transmitted to the receiver on the traffic channel and configured to calculate a number of all frames received on the traffic channel and correctly decoded during a certain time period;

wherein the receiver is further configured to calculate a quality value for a service transmitted on the traffic channel during that certain time period by subtracting a number of frames transmitted during that certain time period from the number of frames

received and correctly decoded during that certain time period~~, and by dividing a difference obtained~~ divided by the number of frames transmitted during that certain time period.

30. (Previously Presented) The cellular radio network element of claim 29, wherein the receiver is further configured to receive silence descriptor frames from the transmitter in place of data frames, if user data are missing.

31. (Currently Amended) An article of manufacture for measuring the quality of a circuit-switched service transmitted on a traffic channel between a transmitter and a receiver in a cellular radio network, the article of manufacture comprising a machine readable medium containing one or more programs which when executed implement the steps of:

transmitting user data to a subscriber terminal using data frames of a traffic channel of a circuit-switched service;

omitting transmission of all data frames of the traffic channel to the subscriber terminal based on a determination that the user data are missing;

transmitting control data to the subscriber terminal using associated control channel frames of the traffic channel;

calculating a number of frames transmitted to the subscriber terminal on the traffic channel during a certain time period;

receiving, from the subscriber terminal, an indication of a number of frames received on the traffic channel and correctly decoded in the subscriber terminal; and

calculating a quality value for a service transmitted on the traffic channel during the certain time period by subtracting the number of frames transmitted during the certain time period from the number of frames received and correctly decoded during that certain time period~~, and by dividing a difference obtained~~ divided by the number of frames transmitted during that certain time period.

32. (Previously Presented) The article of manufacture of claim 31, wherein the one or more programs further implement receiving of silence descriptor frames in place of data frames, if user data are missing.